Application No. 10/580,679

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1-18. (cancelled)

19. A bioactive dish for cell cultures, the dish comprising

a bottom surface, and

a bilayer coated on the bottom surface, the bilayer comprising an internal primary layer made of hydroxypropylmethylcellulose (HPMC) or polyvinyl alcohol (PVA) in contact with the bottom surface, and an external bioactive layer comprising carboxypropylmethylcellulose situated on said internal primary layer.

20. The bioactive dish according to claim 19, said dish presented in the form of a Petri dish or in the form of a multi-well plate.

21. The bioactive dish according to claim 19, wherein the internal HPMC or PVA layer, and the external CMC layer, each have a thickness of approximately 1 to 5 microns.

22. A method for preparing the bioactive dish according to claim 19, comprising:

activating the surface of the bottom of the dish by

electromagnetic discharges,

depositing the internal HPMC primary layer on the bottom of the dish, and then drying the primary layer,

depositing the external bioactive layer on the dried primary layer obtained in the preceding stage, and then drying the external bioactive layer.

23. (canceled)

24. A method for screening anti-ageing molecules intended to inhibit or delay the effects of ageing, comprising:

culturing cells in the presence of an anti-ageing molecule to be studied, in the culture dishes defined in claim 19,

observing the cells by microscope to obtain observations regarding the cells' morphology,

optionally detecting and/or quantifying the cells' proliferation and/or the cells' synthesis to obtain data,

comparing the observations and/or data obtained in the steps above with observations and/or data obtained in cultures of control cells, said control cells being cultured in said culture dishes but in the absence of said anti-ageing molecules to be studied.

25. A method for screening antitumor molecules intended for the treatment of cancer, comprising:

culturing tumor cells in the presence of an antitumor molecule to be studied, in the culture dishes defined in claim 19,

observing the cells by microscope to obtain observations regarding the cells' morphology and/or the cells' differentiation,

optionally detecting and/or quantifying the cells' proliferation, differentiation and apoptosis to obtain data,

and comparing the observations and/or data obtained in the steps above with observations and/or data obtained in cultures of control cells, said control cells being cultured in said culture dishes but in the absence of said antitumor molecules to be studied.

26. A method for *in vitro* diagnosis of the malignancy of tumor cells by measuring the residual ability of cancer cells to differentiate, comprising:

culturing cancer cells in the culture dishes defined in claim 19,

observing the cells by microscope in order to study the cells' morphology and/or differentiation, and

optionally detecting and/or quantifying the cells' proliferation, viability and apoptosis.

27. (canceled)

28. A method for prognosing tumors, comprising applying the method for *in vitro* diagnosis according to claim 26 to a tumor cell sample.